



# Enhanced Automation Educational Campaign

## Stimulating Investment in Demand Response Capability

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*Presented at the SMUD Customer Technology Center  
June 8, 2004*



# Overview of EA Campaign

- Energy Commission sought to encourage increased penetration of DR capability
  - *“Providing needed education and technical assistance will enable customers to take action and upgrade their systems which will increase DR capability”*
- Three major program components:
  - Market research
  - Develop educational materials
  - Provide technical assistance



# Market Research Findings

- DR activities tended to rely on manual processes
- Very little investment in improving building automation and controls
- Most EMSs are underutilized
  - Capabilities not programmed
  - Too much data, not enough information



# Barriers to Investing in DR Capability

- High information search costs
- High transaction costs
  - Especially for manual processes
- Benefits of DR not predictable
- DR programs unstable
- Lack of perceived emergency
- Insulation from real-time market prices



# Needs Vary by Segment

Customer Segment	Existing Controls?	Type of Information/Assistance Needed				
		General Info	Custom Info	Technical Info/Asst	Financial Info	Financial Incentives
Government	Some	Medium	Low	High	Low	Medium
Property Mgmt	Yes	Low	Low	Medium	High	High
Manufacturing	Some	Medium	High	Medium	Medium	Low
Hotel	Yes	Low	High	High	Medium	Low
Restaurant	No	Low	High	Medium	High	Medium
College/university	Yes	Low	Medium	Medium	High	High



# Market Research Conclusions

- DR, by itself, is an inadequate motivator for investment in automation capabilities
- Customer knowledge/expertise lacking
  - Prefer “unbiased” information sources
- Technical services needs unmet
- Concerns about
  - Financial viability
  - Occupant comfort
  - Internal organizational barriers

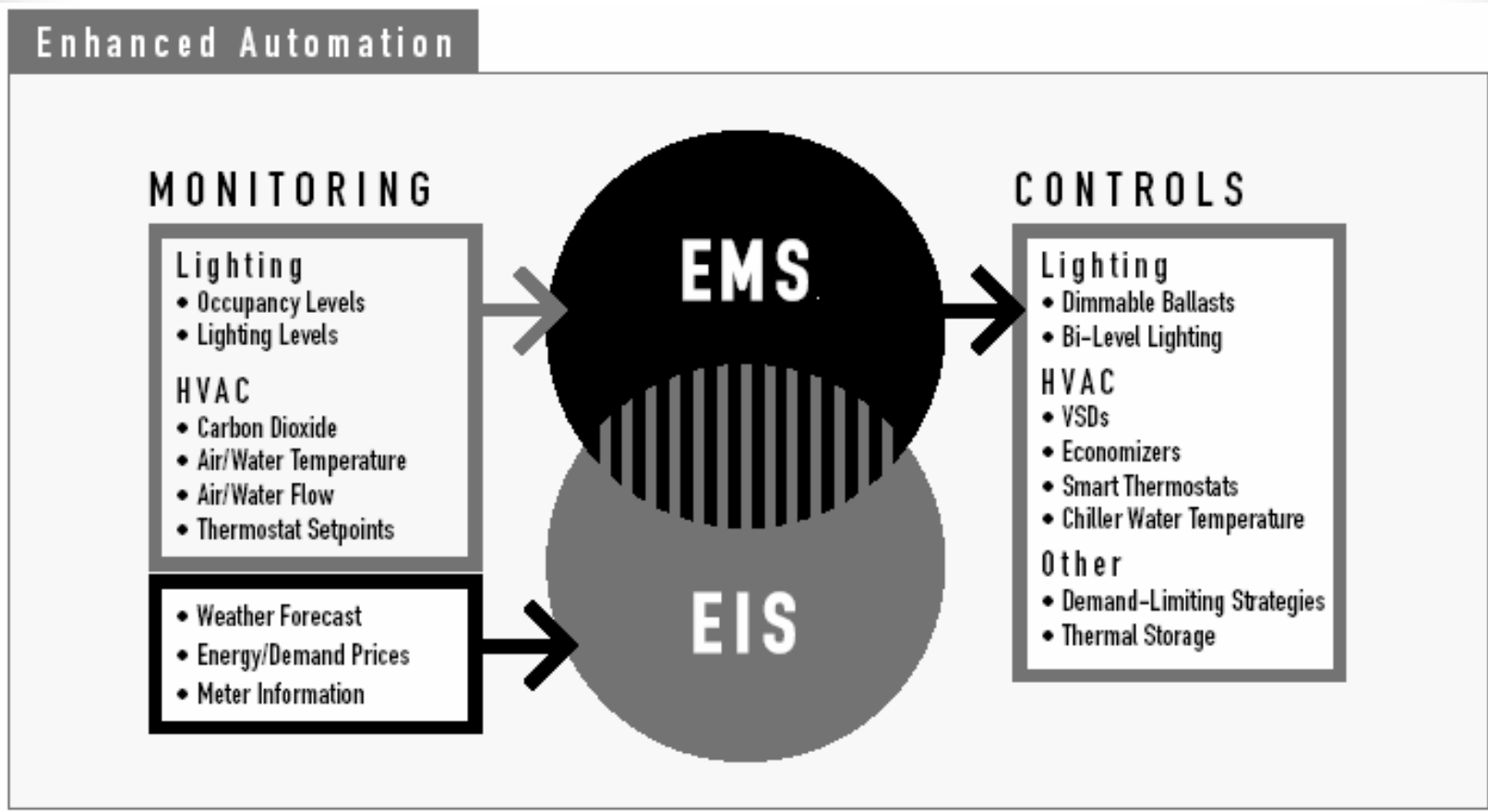


# Educational Campaign Approach

- Shift from DR to “Enhanced Automation”
  - Shift from short-term to long-term focus on capability
  - Integrate demand response with energy efficiency
  - Promote other energy and non-energy benefits
- Target HVAC & lighting controls, EMS, EIS
- Target 1+ MW commercial & institutional
- Offer customized technical assistance



# What is Enhanced Automation?



*EA is essentially any improvement in technology that increases the capability of an existing EMS or BAS*



# Promoting Benefits of EA

## ENERGY COSTS

- Gain reliability
- Minimize impacts from rate volatility
- Reduce utility and maintenance costs
- Benefit from tariff & incentive programs

## BUILDING OPERATIONS

- Increase efficiency
- Reduce occupant complaints & increase comfort
- Diagnose problems
- Control routine problems remotely



# Educational Materials

## Target Stages of the Decision-Making Process

P  
H  
A  
S  
E

**Awareness**

**Interest**

**Intent**

**Implementation**

M  
A  
T  
E  
R  
I  
A  
L

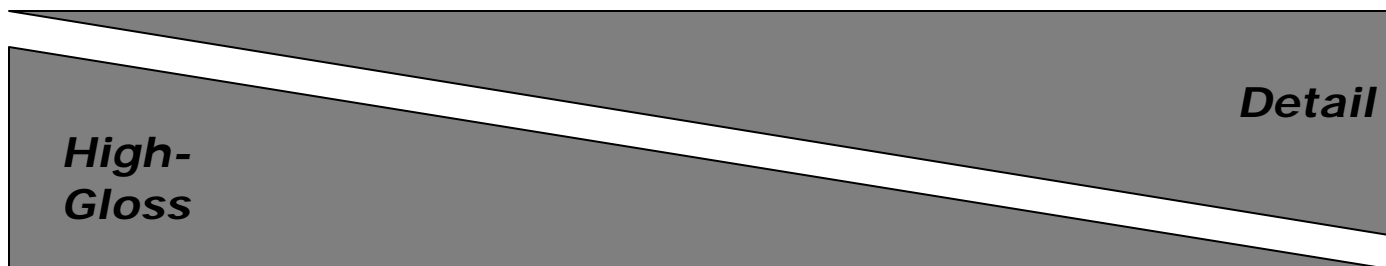
**Brochure**

**Case Studies**

**Business Case  
Guidebook**

**Technical Options  
Guidebook**

C  
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# Response to Materials

- Customers liked broader EA message
- Materials very well received
  - Especially TO guidebook & case studies
  - Weren't aware of options or possible savings
- Trusted info from the Energy Commission
- Customers appreciated and wanted more information relevant to them
  - More case studies, specific examples



# Distribution of Materials

- Goal: distribute guidebooks or case studies to 1,000 commercial customers
- Reached over 5,600 customers

	Distribution Method				
Marketing materials	Direct mail	Utilities	Others	Website	TOTAL
Brochure and/or Case Studies	3233	1427	959	**	5619
BC or TO Guidebook	3	752	797	**	1546

*\*\*Downloads from the Energy Commission website were not tracked*



# Technical Assistance Services

- Module in BOC Program
- Three types of customized technical assistance

		Short term Existing Systems	Long term Investments
Phase 1	Detailed design assistance	Limited	High
Phase 2	Assess peak load reduction potential	Moderate	Moderate
Phase 3	CPP/DBP participation support	High	Limited



# Response to TA

- Customers liked the idea, but underutilized
  - 53 customers received TA; 47 to support CPP
  - Offerings kept shifting, caused confusion
- 200kW – 1MW customers most likely to request TA
- Industrial more likely than expected; Office less
- Some vendors, utility reps distrusted TA from outside source
  - Instead wanted funding for their choice to investigate



# EA Campaign Savings Estimates

Savings Estimates	EA Recommendations		Results as of 3/31/04		Expect to be added by 12/31/06	
	Demand Reduction	Permanent Savings	Demand Reduction Capability	Permanent Energy Savings	Demand Reduction Capability	Permanent Energy Savings
	<i>kW</i>	<i>kWh</i>	<i>kW</i>	<i>kWh</i>	<i>kW</i>	<i>kWh</i>
TA Totals	12,293	7,683,279	8,155	1,546,335	329	3,068,472
Marketing Totals	-	-	3,709	12,979,890	7,417	25,959,780
EA Campaign Totals	12,293	7,683,279	11,864	14,526,225	7,746	29,028,252



# Why Customers Invest in EA

1. Save on energy costs
2. Upgrade old equipment
3. Increase flexibility of control systems



# Recommendations

- Broader EA concept works
  - Tie DR to EE, customers don't always distinguish
- DR programs should address capability
  - Customers want information on options & financing
- Need sustained, multi-channel effort
  - More education needed; best if tied to other rates, programs
- Offer flexible technical assistance
  - Needs vary by customer size & segment; very large want cash
- Develop more case studies
  - Include smaller firms, highlight specific technologies



# EA Resources

- Download case studies, guidebooks and spreadsheet analysis tool:

**[www.ConsumerEnergyCenter.org/enhancedautomation](http://www.ConsumerEnergyCenter.org/enhancedautomation)**